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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,242	02/18/2004	Ling-Yi Liu	IFTP0002USA9	2241
27765	7590	03/27/2006	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116				RAY, GOPAL C
ART UNIT		PAPER NUMBER		
2111				

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/708,242	LIU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Gopal C. Ray	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 01 March 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-108 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11 and 78-81 is/are rejected.
- 7) Claim(s) 12-77 and 82-108 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 2111

1. Applicant's election without traverse of Group I, claims 1-108 filed on 3/1/06 is acknowledged. Claims 1-108 are presented for examination.
2. The drawings filed on 2/18/04 are acceptable by the examiner for examination purposes. However, the Office of Initial Patent Examination (OIPE) reviews drawings initially for publication purposes. Direct any inquiries concerning drawing review for publication purposes to the Office of Initial Patent Examination (OIPE). See MPEP 507 for detail information.
3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Furthermore, all claims should be revised carefully to eliminate all grammatical errors and antecedent basis problems.
4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1-11 and 78-81 are rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art in view of US Patent 6,961,813 granted to Grieff et al.

As per claim 1, applicant's admitted prior art teaches, "a host entity" in Fig. 2; "a storage virtualization controller (SVC)" in Fig. 2, elements SVC1 & SVC2; "a set of physical storage devices (PSD)" in Fig.2.

Applicant's admitted prior art fails to expressly teach the "redundancy of the storage controllers" and "point-to-point serial signal interconnect". However, the above features were well known to one of ordinary skill in the data processing art at the time the invention was made as evidenced by Grieff et al. The reference of Grieff et al. teaches the features in col. 15, lines 10-22. It would have been obvious to one of ordinary skill in the data processing art at the time the invention was made to implement the above feature in the system of applicant's admitted prior art to obtain the claimed invention because both the prior art systems are analogous to improving data processing system and the above feature is a straightforward possibility from which one of ordinary skill in the art at the time the invention was made would select in accordance with circumstances without the exercise of inventive skill so as to allow the system to be compatible with a widely used standard and to take advantage of the many benefits provided by the features such as increasing reliability of the system by handling data efficiently. The reference of Grieff et al. teaches the motivation in col. 1, lines 23-27.

As per claims dependent claims 2 and 3, the reference of Grieff et al. teaches, "serial ATA I/O device interconnect" (claim 2) in col. 2, lines 11-14 and "an access control switch" (claim 3) in Fig. 1, element 1120. The motivation for combining the references discussed in the rejection of claim 1 above is also applicable here.

As per dependent claims 4-6, the claims recite various interconnections including locations of ports of host-side and device-side I/O devices. However, applicant's admitted prior art teaches the added limitations of the claim in Fig. 2 and Paragraph [0018] of the specification of the invention.

As per claim 7, the claim is rejected for the same reasons as discussed in the rejection of claim 1 above.

As per dependent claims 8-11, the claims are rejected for similar reasons as discussed in the related parts of the rejection of claims 2-6 above.

As per claim 78, the claim is rejected for similar reasons as discussed in the rejection of claim 1 above.

As per dependent claims 79-81, the claims are rejected for similar reasons as discussed in the related parts of the rejection of claims 2-6 above.

6. Dependent claims 12-77 and 82-108 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an Examiner's Statement of Reasons for Allowance:

The claimed invention is directed to "a redundant external storage virtualization computer system". The examiner has done complete search and found no prior art of record, alone or in combination, teaches or fairly suggests additional limitation(s) of each dependent claim such as "the access control switch selectively allows patching through of the serial signal of the physical storage device to and from the first and second storage virtualization controllers" in claim 12, etc. in combination with the remaining claimed elements. Therefore, the invention as claimed in dependent claims 12-77 and 82-108 is considered allowable because combinations recited in the claims are patentably distinguished from the prior art of record.

Any comments considered necessary by applicant must be submitted in response to this office action to avoid processing delays. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the art, rather than by their specific disclosure.

If applicants are aware of any prior art better than those are of record, they are required to bring the prior art to the attention of the examiner. Applicants are also reminded that each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in 37 CFR 1.56. Applicants are advised to submit any information material to patentability in accordance with 37 CFR 1.97 and 1.98.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gopal C. Ray whose telephone number is (571) 272-3631. The examiner can normally be reached on Monday - Friday from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax phone number for this Group is (571) 273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [john.cottingham@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC central telephone number is (571) 272-2100. Moreover, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lastly, paper copies of cited U.S. Patents and Patent Application Publications ceased to be mailed to applicants with office actions as of June 2004. Paper copies of Foreign Patents and Non-Patent Literature will continue to be included with office actions. These cited U.S. Patents and Patent Application Publications are available for download via Office's PAIR. As an alternate source, all U.S. Patents and Patent Application Publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-

217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. Patent or Patent Application Publications will not be granted.

*Gopal C. Ray*  
GOPAL C. RAY  
PRIMARY EXAMINER  
GROUP 2300